

IN THE CLAIMS:

Please amend the claims as follows:

1-19. (Canceled)

20. (Currently amended) An apparatus, comprising:

a substrate including an insulating surface;

a first ~~an~~ individually electrically addressable electrically conductive interconnect directly connected to located either on an the insulating surface of the substrate or a (semi)conductive substrate that has been coated with an insulating layer;

a first vertically aligned carbon nanofiber grown from the first individually electrically addressable electrically conductive interconnect;

a second individually electrically addressable electrically conductive interconnect directly connected to the insulating surface of the substrate; and

a second ~~at least one~~ vertically aligned carbon nanofiber grown from coupled to the second individually electrically addressable electrically conductive interconnect,

wherein the first vertically aligned carbon nanofiber is individually electrically addressable via the first individually electrically addressable electrically conductive interconnect and the second vertically aligned carbon nanofiber is individually electrically addressable via the second individually electrically addressable electrically conductive interconnect.

21-22. (Canceled)

23. (Currently amended) The apparatus of claim 20, further comprising a catalyst coupled to the at least one member selected from the group consisting of the first vertically aligned carbon

nanofiber and the second vertically aligned carbon nanofiber.

24. (Original) The apparatus of claim 23, wherein the catalyst includes at least one metal selected from the group consisting of nickel, iron and cobalt.

25. (Previously presented) The apparatus of claim 20, further comprising the substrate, wherein the substrate includes at least one member selected from the group consisting of quartz, sapphire and magnesia.

26. (Original) The apparatus of claim 20, further comprising the substrate, wherein the substrate is substantially optically transmissive.

27. (Original) The apparatus of claim 20, wherein the electrically conductive interconnect includes at least one refractory metal selected from the group consisting of W, Mo, Ta and Nb.

28. (Currently amended) The apparatus of claim 20, further comprising an electrochemical passivator ~~coupled to~~ deposited on at least a portion of a sidewall surface of ~~the~~ at least one member selected from the group consisting of the first vertically aligned carbon nanofiber and the second vertically aligned carbon nanofiber.

29. (Original) The apparatus of claim 28, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO₂, Si₃N₄ and a polymer.

30. (Currently amended) The apparatus of claim 28, wherein a tip of the at least one vertically aligned carbon nanofiber member is not passivated.
31. (Currently amended) The apparatus of claim 20, further comprising a buffer between the at least one member selected from the group consisting of the first vertically aligned carbon nanofiber and the second vertically aligned carbon nanofiber and at least one member selected from the group consisting of the first electrically conductive interconnect and the second electrically conductive interconnect.
32. (Original) The apparatus of claim 31, wherein the buffer includes at least one substance selected from the group consisting of Ti, W, Mo and titanium nitride.
33. (Canceled)
34. (Currently amended) The apparatus of claim 20, further comprising a parallel lead for active capacitance cancellation coupled to the electrically conductive interconnect, wherein the parallel lead and the electrically conductive interconnect define a plane that is substantially perpendicular to both the at least one first vertically aligned carbon nanofiber and the second vertically aligned carbon nanofiber.
35. (Currently amended) A biosensor, comprising
a substrate including an insulating surface;
a first an individually electrically addressable electrically conductive interconnect directly connected to ~~located either on an~~ the insulating surface of the substrate or a (semi)conductive substrate that has been coated with an insulating layer;

a first vertically aligned carbon nanofiber grown from the first individually electrically addressable electrically conductive interconnect;

a second individually electrically addressable electrically conductive interconnect directly connected to the insulating surface of the substrate; and

a second ~~at least one~~ vertically aligned carbon nanofiber grown from ~~coupled to~~ the second individually electrically addressable electrically conductive interconnect,

wherein the first vertically aligned carbon nanofiber is individually electrically addressable via the first individually electrically addressable electrically conductive interconnect and the second vertically aligned carbon nanofiber is individually electrically addressable via the second individually electrically addressable electrically conductive interconnect.

36. (Currently amended) A field emitting array, comprising

a substrate including an insulating surface;

a first ~~an~~ individually electrically addressable electrically conductive interconnect directly connected to ~~located either on an~~ the insulating surface of the substrate or a (semi)conductive substrate that has been coated with an insulating layer;

a first vertically aligned carbon nanofiber grown from the first individually electrically addressable electrically conductive interconnect;

a second individually electrically addressable electrically conductive interconnect directly connected to the insulating surface of the substrate; and

a second ~~at least one~~ vertically aligned carbon nanofiber grown from ~~coupled to~~ the second individually electrically addressable electrically conductive interconnect,

wherein the first vertically aligned carbon nanofiber is individually electrically addressable via the first individually electrically addressable electrically conductive interconnect and the

second vertically aligned carbon nanofiber is individually electrically addressable via the second individually electrically addressable electrically conductive interconnect.

37. (Currently amended) A kit, comprising:

a substrate including an insulating surface;

a first ~~an~~ individually electrically addressable electrically conductive interconnect directly connected to ~~located either on an~~ the insulating surface of the substrate ~~or a (semi)conductive substrate that has been coated with an insulating layer;~~

a first vertically aligned carbon nanofiber grown from the first individually electrically addressable electrically conductive interconnect;

a second individually electrically addressable electrically conductive interconnect directly connected to the insulating surface of the substrate; and

a second ~~at least one~~ vertically aligned carbon nanofiber ~~grown from~~ coupled to the second individually electrically addressable electrically conductive interconnect,

wherein the first vertically aligned carbon nanofiber is individually electrically addressable via the first individually electrically addressable electrically conductive interconnect and the second vertically aligned carbon nanofiber is individually electrically addressable via the second individually electrically addressable electrically conductive interconnect.

38. (Original) The kit of claim 37, further comprising instructions.

39. (Currently amended) The biosensor of claim 35, further comprising an electrochemical passivator deposited on at least a portion of a sidewall surface of the at least one member selected from the group consisting of the first vertically aligned carbon nanofiber and the second vertically aligned carbon nanofiber.

40. (Previously presented) The biosensor of claim 39, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO₂, Si₃N₄ and a polymer.

41. (Currently amended) The biosensor of claim 39, wherein a tip of the at least one ~~vertically aligned carbon nanofiber~~ member is not passivated.

42. (Previously presented) The field emitting array of claim 36, further comprising an electrochemical passivator deposited on at least a portion of a sidewall surface of the at least one member selected from the group consisting of the first vertically aligned carbon nanofiber and the second vertically aligned carbon nanofiber.

43. (Previously presented) The field emitting array of claim 42, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO₂, Si₃N₄ and a polymer.

44. (Currently amended) The field emitting array of claim 42, wherein a tip of the at least one ~~vertically aligned carbon nanofiber~~ member is not passivated.

45. (Currently amended) The kit of claim 37, further comprising an electrochemical passivator deposited on ~~coupled to~~ at least a portion of a sidewall surface of the at least one member selected from the group consisting of the first vertically aligned carbon nanofiber and the second vertically aligned carbon nanofiber.

46. (Previously presented) The kit of claim 45, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO_2 , Si_3N_4 and a polymer.

47. (Currently amended) The kit of claim 45, wherein a tip of the at least one ~~vertically aligned carbon nanofiber~~ member is not passivated.

48-50. (Canceled)